

THE NAUTILUS.

VOL. XXIX.

JULY, 1915.

No. 3

VITREA CRYPTOMPHALA N. SP., WITH NOTES
ON THE INDENTATA GROUP.

BY GEORGE H. CLAPP.

VITREA CRYPTOMPHALA n. sp. Fig. 1.

Shell thin, polished, very light horn-color to white, generally white, translucent; whorls 5 to $5\frac{1}{2}$, those of the spire regularly increasing, the last widening very rapidly and doubling the diameter of the shell. Aperture broadly lunate, sutures well impressed, all whorls showing through the shell. Surface sculptured with rather evenly spaced, radiating grooves continued to the base as in *V. indentata* and *carolinensis*, there being from 23 to 34 on the body whorl. Micro-sculpture of even, close, clear-cut spiral engraved lines like those of *carolinensis*, best seen with a magnification of 25 diameters or over. Spire much depressed, almost flat, the termination of the last whorl slightly raised at the lip which is straight on the lower edge and well curved forward above, projecting about 1 mm. beyond the lower lip; at the columellar end the lip is thickened and joined to a tongue-like callus which completely covers the umbilicus at all stages of growth. There is a thin, microscopically granular parietal callus, as in *V. indentata*. Base of shell well rounded and less impressed in the umbilical region than *indentata* or *carolinensis*.

Shell figured (Knox Co.,) 5.1x4.2x2.1mm., whorls 5, 23 grooves on body whorl.

Largest, Knox Co., 5.7x4.8x2.7mm., whorls 5, 26 grooves on body whorl.

Largest, Knoxville, 5.9x5.0x2.8mm., whorls 5, 34 grooves on body whorl.

Smallest, Knox Co., 2.1x1.9x1.1mm., whorls 3, umbilicus completely covered.

The largest shell seen is from "along Coosa River, 2 miles N. of Wetumpka, Ala.," it is 8.0x6.8x3.3mm. whorls $5\frac{1}{2}$, 28 grooves on body whorl.

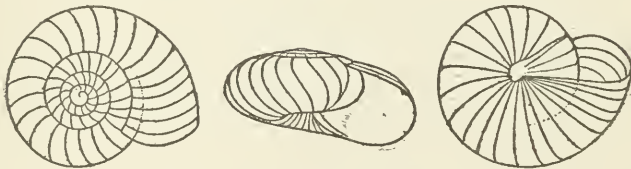


FIG. 1.—VITREA CRYPTOMPHALA.

Types from a lot of over 400 shells collected by the late Mrs. George Andrews and labeled "Knox Co., Tenn." A lot of 18 shells in her cabinet series are labeled "Knoxville, Tenn.": they all probably came from near Knoxville, perhaps from a favorite "hunting ground" of hers, "The Cliffs" on the south side of the river. Type No. 7365 of my collection. Cotypes in Acad. Nat. Sci. Phila. (No. 112421), U. S. Nat. Mus., and collection of Dr. Bryant Walker.

At first I was inclined to consider this a variety of *V. carolinensis*, but the flatter spire, the umbilicus covered at all stages of growth, the less excavated umbilical region and the wider aperture indicate a good species. I examined 250 *V. indentata* from 41 localities and 110 *carolinensis* and *var. wetherbyi* from 15 localities and found no intermediates.

In addition to the Knox Co. shells I have *cryptomphala* from 14 localities in Alabama, San Antonio, Tex., McComb City, Miss., Fayetteville, Tenn., and Albion, Ill., nearly 600 shells in all. A sectioned shell shows the thickening of the columella, caused by the callus, clear to the apex.

In the box with the Knox Co. *cryptomphala* were over 70 shells which from the sculpture should be *V. carolinensis wetherbyi*, but if they were found in the North would be called *indentata*, and a single example of *V. rhoadsi*. I am indebted to Mr. Walker for the suggestion of the very appropriate name.

Some notes on *Vitrea indentata* (Say) and allies may be given here.

In the Journ. Acad., 11, 372 (1822) Say described *Helix indentata* as imperforate, stating: "umbilicus none, but the umbilical region is deeply indented". Pilsbry, in *The Nautilus*, xii, p. 102, shows that this was an error:—"In Say's types the perforation may be seen with a good lens, though it was not noticed by Say, who probably worked with what would now be thought an inferior glass".

The Texas form of *indentata* is generally larger than the typical eastern form and was at one time identified by W. G. Binney as *sculptilis* Bld. In the *British Naturalist*, April 1893, p. 81, Cockerell speaks of the Texas form as "*Z. indentatus* var. *umbilicatus* Singley" (See also *Nautilus*, xii, p. 120). This variety has a *very distinct* umbilicus.

"*Zonites carolinensis*" Ckll., is very inadequately described in Binney's Supplement iv, p. 167, pl. III, fig. 7, and it will be noticed that the figure shows a distinct perforation. In the *Nautilus*, xii, p. 120, Cockerell gives his "original description", although I have been unable to find it in any other place. In this he says: "Umbilicus small, narrow".

In Proc. Acad. Nat. Sci., 1900, p. 130, Pilsbry describes the microsculpture of *carolinensis* as a character which separates it from *indentata* and calls all of the Great Smoky shells *carolinensis*. In a review of this paper, "Mollusca of the Great Smoky Mountains", published in the *Nautilus*, vol. xiv, p. 45, Cockerell says: "Thus in place of *Vitrea indentata* there is an abundance of *V. carolinensis* of a small type (var. *wetherbyi* Ckll. ined.) intermediate between *indentata* and *carolinensis* proper, the exact locality of which is unfortunately unknown". This is the only "description" of var. *wetherbyi* that I have been able to find, except that in Proc. A. N. S., 1902, p. 430, "The Mollusca of the Mt. Mitchell Region, No. Car.," Pilsbry says: "The type

specimens (*V. carolinensis*) have 5 whorls with a maximum diameter of 10 mm". Under *V. carolinensis wetherbyi* Ckll., he says:—"In the report of the expedition of 1899 the specimens of *V. carolinensis* were found to belong to a small race, ranging from $5\frac{1}{2}$ to 7 mm. in diameter. Cockerell has since distinguished it under the above varietal name". . . . "It is intermediate between typical *V. carolinensis* and *V. indentata*." From this it would seem that shells from say $7\frac{1}{2}$ mm. up to 10 mm. diameter are *carolinensis* and under 7 mm. diameter are var. *wetherbyi*, and as there is nothing said to the contrary it is safe to assume that the variety is umbilicate.

Under the above differentiation by size the only *carolinensis* in my collection are 5 specimens collected by the late Mrs. Geo. Andrews at Cranberry, Avery Co., N. C.; they are narrowly umbilicate. All of the balance are either "Var. *wetherbyi*" or the new species described above.

Cockerell says that *carolinensis* has about 26 grooved lines on the body whorl, my three largest Cranberry shells have 38, 34 and 32 respectively, while a $6\frac{1}{2}$ mm. diameter shell from Mitchell Co., N. C., (labeled *carolinensis* by A. G. Wetherby) has 35 and a $6\frac{1}{4}$ mm. shell from Paint Rock, N. C. has 32 lines.

THE NATIVE OYSTERS OF OYSTER RIVER, DURHAM, N. H.

BY C. H. BATCHELDER.

A natural bed of native oysters has persisted in Oyster river, Durham, New Hampshire, ever since the settlement of the town in 1635. This persistence of the oysters is interesting in view of the fact that they have been fished almost constantly. A superficial survey of the beds reveals the following very general information.

The beds are found in from six to fifteen feet of water at low tide, in the channel of the stream, which varies from five to about twenty yards in width, and the bed extends along this channel for a half mile, in such quantities that one can rake a bushel easily in less than an hour. I am confident however, that the bed extends into deeper water for half a mile beyond